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## A ONE-TUBE DETECTOR AND AMPLIFIER

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## /A digest.7

Rural radio amateurs using crystal sets are greatly interested in increasing the loudness and stability of their operation. The simplest method of solving this problem is by adding a vacuum-tube detector and audio amplifier to the crystal set. In the interests of economy, it is advisable to use a very simple attachment in which the same tube serves as a diode detector and audio amplifier, as described below.

## Attachment Circuit

The circuit of the detector and amplifier is very simple. A single Type 2K2M or 2Zh2M tube is used, in which the cathode and plate serve as a diode detector, while the cathode, control grid, and screen grid form a triode amplifier. An electromagnetic loud-speaker is inserted in the screen grid circuit.

## Power Supply

One plate battery, Type BAS-80, and two 3 S-L-30 dry cells connected in parallel are used. To obtain more volume, however, it may be desirable to increase the plate voltage to 120-130 volts, and filament voltage to 2 volts (four 3 S-L-30 cells in two parallel groups). In this connection, it is necessary to include a 15-20-ohm rheostat in the filament circuit of the tube.

An attachment of this type gives good amplification and is very economical as regards power supply. The batteries will last 6-8 months, working 5-6 hours every day.

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